SANTA CRUZ BIOTECHNOLOGY, INC.

Caytaxin siRNA (m): sc-62083

BACKGROUND

Caytaxin, also known as ATCAY (ataxia cayman type protein), CLAC or BNIP-H, is a 371 amino acid neuron-restricted protein that exists as three alternatively spliced isoforms. Deficiency or mutation of the gene encoding Caytaxin is associated with Cayman ataxia, a recessive congenital ataxia specific to a restricted population on Grand Cayman Island. Symptoms of Cayman ataxia include hypotonia, psychomotor retardation and cerebellar dysfunction, including wide-based ataxic gait, nystagmus, intention tremor and dysarthria. Colocalizing to mitochondria, Caytaxin binds UKHC and contains one CRAL-TRIO domain that is used to interact with small lipophilic molecules. As an adaptor protein, Caytaxin regulates transport of mitochondria, and, as observed in RNA interference studies, suppression of Caytaxin leads to mitochondrial redistribution in neurites.

REFERENCES

1. Kapfhamer, D., et al. 1996. The neurological mouse mutations jittery and hesitant are allelic and map to the region of mouse chromosome 10 homologous to 19p13.3. Genomics 35: 533-538.
2. Nystuen, A., et al. 1996. A cerebellar ataxia locus identified by DNA pooling to search for linkage disequilibrium in an isolated population from the Cayman Islands. Hum. Mol. Genet. 5: 525-531.
3. Bomar, J.M., et al. 2003. Mutations in a novel gene encoding a CRAL-TRIO domain cause human Cayman ataxia and ataxia/dystonia in the jittery mouse. Nat. Genet. 35: 264-269.
4. Gilbert, N., et al. 2004. Characterization of a mutagenic B1 retrotransposon insertion in the jittery mouse. Hum. Mutat. 24: 9-13.
5. Xiao, J., et al. 2005. Caytaxin deficiency causes generalized dystonia in rats. Brain Res. Mol. Brain Res. 141: 181-192.
6. Online Mendelian Inheritance in Man, OMIM™. 2005. Johns Hopkins University, Baltimore, MD. MIM Number: 608179. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: Atcay (mouse) mapping to 10 C1.

PRODUCT

Caytaxin siRNA (m) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Caytaxin shRNA Plasmid (m): sc-62083-SH and Caytaxin shRNA (m) Lentiviral Particles: sc-62083-V as alternate gene silencing products.

For independent verification of Caytaxin (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-62083A, sc-62083B and sc-62083C.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

Caytaxin siRNA (m) is recommended for the inhibition of Caytaxin expression in mouse cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Caytaxin gene expression knockdown using RT-PCR Primer: Caytaxin (m)-PR: sc-62083-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

For research use only, not for use in diagnostic procedures.